

## Section 984

### SAMPLING METHODS

**All samples are obtained in accordance with the applicable specifications. When random selection is required, select sample times or locations in accordance with Section 981 and ASTM D 3665 Standard Practice for Random Sampling of Construction Materials.**

#### **984.01 COARSE AND FINE AGGREGATE**

Refer to AASHTO T 2: Standard Practice for Sampling Aggregates.

#### **984.02 SAMPLING BITUMINOUS PAVING MIXTURES FROM BEHIND THE PAVER**

##### **984.02.01 Scope**

This method covers sampling bituminous paving mixtures from the roadway behind the paver prior to compaction. Samples obtained by this procedure may be used for acceptance and quality control of materials whose point of acceptance is from the grade prior to compaction such as Hot Mix Asphalt.

##### **984.02.02 Apparatus**

1. Square mouth shovels
2. Trowel and scoops
3. A single metal plate with two feet minimum width and sufficient length to hold required sample size. The plate shall have a wire attached sufficient in length to extend beyond the edge of the mat.
4. Cookie cutter sampling device, square sampling template constructed from formed steel angle with two handles, device shall be sized to fit over metal plate without extending beyond it. (Optional)
5. Containers such as cardboard boxes, heat resistant buckets, and insulated containers.

##### **984.02.03 Sample Size**

Sample size depends on:

1. The test methods to be performed.
2. Number of labs performing testing
3. Project specification

##### **984.02.04 Procedure**

1. Coordinate sampling with paving crew and paving operator, ensuring safety.
2. Place the sampling plate longitudinally on the roadway ahead of the paver at a pre-determined random location.
3. Run the attached wire perpendicular to the direction of the paving operation, beyond the farthest auger extension and/or ski. Keep wire taut and on the ground to prevent snagging the auger extension and/or ski.
4. Allow the paving operation to run without interruption.
5. When the paver has passed over the plate, pull the wire to locate plate perimeter. (If the paver shifts the plate such that there is bituminous material under the plate, remove plate and start over.)

6. With plate still in place, remove full depth of bituminous material from the plate. Care should be taken to prevent sloughing of material. Optional use of cookie cutter: Place the sampling device over the plate, press device through material, and remove all material inside the sampling device.
7. Deposit bituminous material in suitable container; prevent contamination and segregation of material.

### **984.03 SAMPLING BITUMINOUS MATERIAL FROM A WINDROW**

#### **984.03.01 Scope**

This method covers sampling bituminous material such as Hot-Mix Asphalt (HMA) from the windrow at the job-site. These samples are to be utilized for Hamburg Wheel Track Testing only. Materials Manual Part 8- Section 990.

#### **984.03.02 Apparatus**

1. Square mouth shovels
2. Containers such as cardboard boxes, heat resistant buckets, and insulated containers

#### **984.03.03 Procedure**

1. Choose a location along the windrow that appears uniform; avoid the beginning or the end of the windrow section.
2. Remove approximately 1 foot from the top of the windrow.
3. Bench out a section at an intermediate height on each side of the windrow.
4. Obtain one increment of the sample from the top of the windrow.
5. Obtain two more increments from the benched sections.
6. Deposit bituminous material in suitable container; prevent contamination and segregation of material.

### **984.04 SAMPLING BITUMINOUS MATERIAL FROM TRUCK TRANSPORTS**

#### **984.04.01 Scope**

This method covers the UDOT modifications to AASHTO T 168: Sampling of Bituminous Paving Mixtures, when sampling bituminous material whose point of acceptance is the plant from the transport unit such as Open-graded Surface Course (OGSC) and Bonded Wearing Course (BWC).

#### **984.04.02 Apparatus**

1. Square mouth shovel,
2. Square mouth scoop
3. Thermometer with a range of 100 to 400°F,
4. Stainless steel bowl or pan of sufficient size for sample to be obtained

**984.04.03 Procedure**

1. Follow AASHTO T 168: Sampling of Bituminous Paving Mixtures Section 5.2.2 "*Sampling from Truck Transports*" with the following modifications: Sample may be obtained in a single increment.
2. Obtain sample at test sample size (refer to test method to be performed for sample size, i.e. T 308: Determining the Asphalt Binder Content of Hot-Mix Asphalt by the Ignition Method would require a 2000 g sample for ¾" Nominal Maximum Aggregate Size material).
3. Determine the temperature of the material in the same location sample was obtained.

**984.04.04 Alternate Procedure**

For sampling when the above procedure is deemed unsafe.

1. Fill a loader bucket from the hopper.
2. At a safe location, perform steps 2 and 3 above.
3. Remaining material in the loader bucket shall be loaded onto transport for delivery to job site. (Remainder of truck transport may be loaded from the hopper before, or after sample is obtained.)

**984.05 SAMPLING BITUMINOUS MATERIAL AFTER COMPACTION (OBTAINING CORES)****984.05.01 Scope**

This method covers the UDOT modifications to AASHTO T 168: Sampling of Bituminous Paving Mixtures, when obtaining test specimens (cores) of compacted bituminous material.

**984.05.02 Apparatus**

Core drill with a diamond cutting edge.

**984.05.03 Procedure**

Follow AASHTO T 168: Sampling of Bituminous Paving Mixtures Section 5.2.6 with the following modifications:

1. Sample may be obtained in a single increment.
2. Sample location is randomly selected in accordance with Section 981, ASTM D 3665 Standard Practice for Random Sampling of Construction Materials, and the Specifications under contract.
3. Party identified in the specification marks sample location. Sample shall be obtained within 6" of the marked sample location.
4. Samples obtained for in-place density and/or thickness shall be 4" diameter cylinders. Samples shall be obtained prior to traffic being allowed on the pavement. Care shall be taken not to damage specimen, damaged density specimens shall be discarded. Replacement specimens shall be obtained within 1 foot of original location.